Volunteer Firemen

Professional Journal of the Volunteer Firemen's Section of the National Fire Protection Association

Volume 3, Number 3 **BOSTON, MASSACHUSETTS** **March, 1936**

When the house pictured was built the fundamentals of safe chimney construction were not observed, neglect which caused the destruction shown.

Making Chimneys Safe

Here are Some Tests to Show When Chimneys Need to Be Rebuilt or Repaired and Pointers on Safe Construction

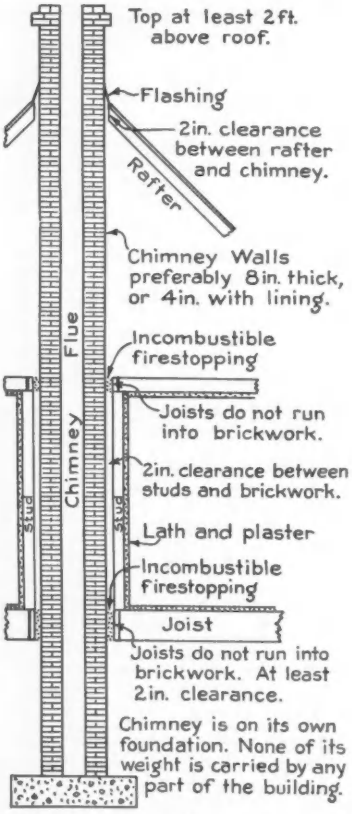
AT one time chimneys were frequently built of wood. In fact, this practice caused so much work for Colonial bucket brigades that wooden chimneys were prohibited by ordinance in New York City in 1648. Today, flimsy, unlined brick chimneys, wooden beams projecting into chimney walls, chimneys built on wooden supports, and like defects in construction are daily causing present day fire departments a lot of trouble.

Taken together with the allied fire causes resulting from stoves, furnaces and their pipes, defective chimneys and flues are a primary cause of fire losses. Fires from defective chimneys and flues start underneath roofs, back of stoves and ranges, under hearths and in other places not in plain view. This is one reason why they are so often a factor in loss of life fires.

It is a practice of many fire departments to make an annual inspection of all chimneys in the community. There are several methods of determining the condition of a chimney, among them the following.

If the exposed outside surface of

Points Which Make A Safe Chimney


Top at least 2ft. above roof.
Flashing
2in. clearance between rafter and chimney.
Rafter
Chimney Walls preferably 8in. thick, or 4in. with lining.
Flue
Chimney
Incombustible firestopping
Joists do not run into brickwork.
2in. clearance between studs and brickwork.
Stud
Stud
Lath and plaster
Incombustible firestopping
Joist
Joists do not run into brickwork. At least 2in. clearance.
Chimney is on its own foundation. None of its weight is carried by any part of the building.

The above illustration covers the more important details of chimney construction. Further particulars are given in a leaflet "Make Your Chimneys Safe" a copy of which will be sent to any reader on request to the N.F.P.A. Executive Office, 60 Batterymarch St., Boston, Mass. Also available is a Suggested Ordinance for Chimney Construction.

a chimney is at any time too hot to rest the hand against it without discomfort, it is an indication that any woodwork in contact with the chimney is probably unsafe.

A SMOKE test is a simple method of detecting the presence of cracks or other openings in a chimney. The method is to build a smudge fire in a furnace or stove connected near the bottom of the chimney and when the smoke is flowing freely to close the chimney tightly at the top. Escape of smoke through the chimney walls indicates defects to be corrected.

To ascertain if old chimneys need rebuilding, climb to the top and look down *inside*. If the mortar has fallen away from the bricks on the inside, it will soon do so all the way through the wall. Take a sharp instrument such as an ice pick and try to push it through the mortar; if this can be done, the chimney is dangerous and should be rebuilt.

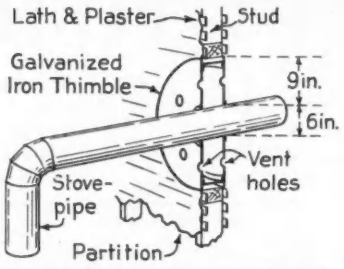
THE accompanying sketch shows some of the points which make a chimney safe. The fundamental principle of good construction is to have the chimney stand entirely on its own foundation and entirely independent of the house which is built around it. The foundation must be below frost line and solid enough to carry the load of the chimney without permitting appreciable settling.

Uneven settling of houses and chimneys cause most of the difficulties usually resulting in fires, but these can be avoided if no part of the wooden framing of a house is dependent on the chimney and if the builder takes care that no woodwork is nearer than two inches to the brickwork.

Good chimneys may be built of common brick with walls 8 inches thick. A fire clay flue lining should be used as it prevents disintegration of mortar and brick and makes a smooth flue which improves draft. (With a good flue lining the brick walls are usually safe if only 4 inches thick.) "Brick-on-edge" chimneys consisting of walls less than 2 inches thick are dangerous not only because of the thinness of the chimney walls but also that form of construction does not possess sufficient strength to carry its own weight, thus cracking open at the slightest settling of the building. Flues or chimneys made of sewer pipe tile are obviously flimsy and inadequate.

Most other chimney difficulties come from the smokepipes and flue holes. Flue holes not in use should be kept closed with a metal flue stop. Fire departments frequently go to fires caused by flue holes which have been covered with wallpaper or stuffed with paper or rags.

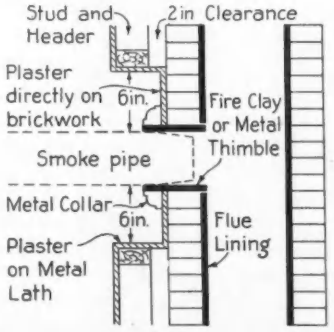
Long smokepipes should be avoided. In any case it is important that they be well supported and kept at a safe distance from woodwork.



Method of securing reasonable safety when a smoke pipe must be run through an ordinary wood lath and plaster partition.

When a stove or furnace fire is being driven to produce the maximum heat, stovepipes may become overheated and are dangerous to woodwork even when they are several feet away. A minimum clearance of 9 inches between smoke pipes and woodwork is often specified by ordinances. This is often too little and 12 or 18 inches, or even more, is desirable clearance and should be obtained whenever possible.

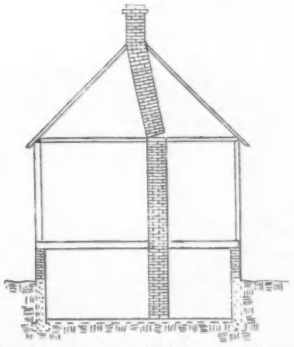
Smokepipes running through combustible partitions and floors are obviously dangerous and should have the protection of a galvanized iron thimble. Most thimbles on the market today are dangerous as they provide as little as 2 inches clearance between the pipe and woodwork. Minimum clearances of 6 to 9 inches should be obtained. Thimbles should have double walls and be arranged with holes so that air may circulate between the inner and outside walls.



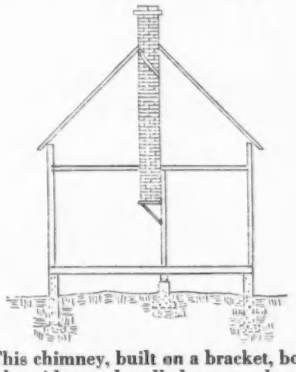
Detail of a safe arrangement for a flue hole.

A Page of Unsafe Chimneys

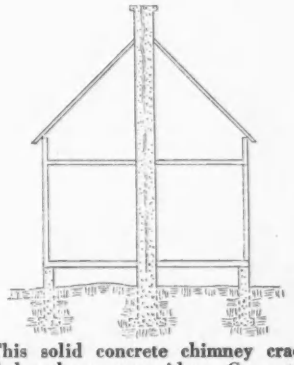
Types Actually Found in Dwellings by Fire Inspectors



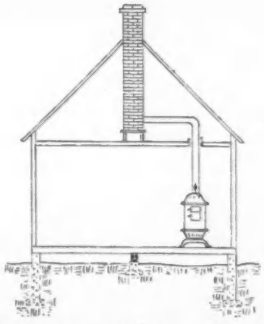
This chimney was built on a slant to go through the roof. It bound at the ridge, settled, and broke off. It cannot safely be repaired.



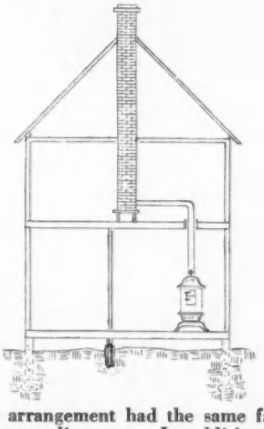
This chimney, built on a bracket, bound at the ridge and pulled apart when the building settled.



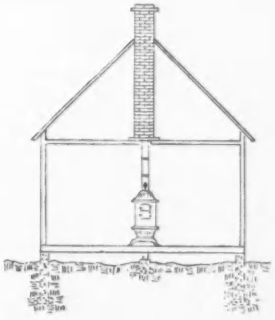
This solid concrete chimney cracked full length on two sides. Concrete, as ordinarily used (with no reinforcing) does not make a satisfactory chimney. This one cannot safely be repaired.



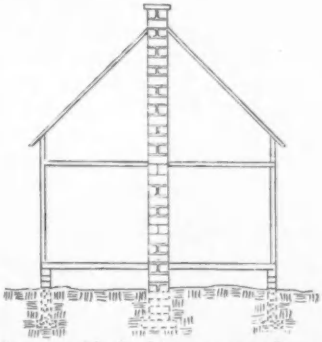
This chimney rested on ceiling joists, and pulled apart at the ridge with the settlement of the building. There is also the additional hazard from the smokepipe passing through the ceiling and entering the chimney in a part of the attic where it is concealed.



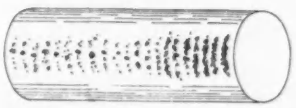
This arrangement had the same faults of the preceding case. In addition, the smokepipe in the second story is too near the floor, subject to injury and where it may ignite rugs and furniture.



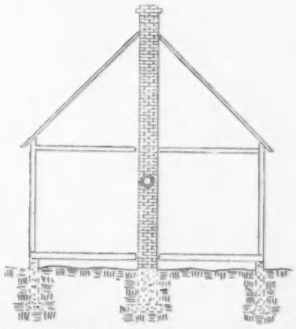
The stovepipe opening in the bottom of the chimney required the unsafe and poorly supported chimney shown.



Concrete block chimneys are often unsafe because the blocks are frequently poorly made and suffer more than brickwork from expansion and contraction due to changes in temperature.



During the summer, moisture formed in beads in the bottom of this furnace pipe, honeycombing it with rust holes. For this reason it is recommended that smokepipes be taken down during the summer, placed in a dry place and carefully inspected before replacement in the fall.



This sketch indicates an opening too large for the smokepipe used. Sparks may escape where the pipe does not fit snugly, or the pipe itself may fall out.

Spring Conflagrations from Grass Fires

Meeting the Problem of Grass Fires with Patrols on Dry Days Not Only to Save Needless Runs But to Avert Sweeping Fires

GRASS, brush, forest, and other outdoor fires occur most frequently during the spring months when weather conditions favor their start and spread. In most of these fires the losses are small or negligible, but they cause fire departments a lot of extra runs and work. In some cases, however, small outdoor fires grow into conflagrations and do millions of dollars' worth of damage and threaten the safety of entire communities.

Progressive fire departments have learned about when to expect the greatest number of this type of fire and make plans each spring to prevent them or keep them from gaining much headway. If outdoor fires are plotted on a map of the community it will show that the majority of them occur in the same sections each year.

Weather conditions are an important indication as to when fires are most likely to develop into conflagration proportions. Serious fires are more apt to occur when the humidity is low than when there is considerable moisture in the air. Wooden shingle roofs (also other combustible building construction) ignite and spread fire rapidly, especially after a long dry spell. High winds complicate the problem still further.

A brush fire covering ten square miles and endangering an entire city. A railroad station and several homes were destroyed.

A study of the 100 principal conflagrations occurring in the United States and Canada during the last 35 years is proof of the relationship between weather and serious fires. Generally several factors may be set down as being responsible for making serious fires out of small ones. In 33 of the 100 conflagrations a high wind contributed; in 7, unusually hot or dry weather was important; and in 5, forest or brush fires swept into the town to destroy life and property. Weather has a direct effect on the burning qualities of wooden shingle roofs, and it is interesting to note that such roofs were a contributing factor in 55 of the 100 conflagrations. Fifty-one of the 100 conflagrations occurred in the four months of March, April, May, and June.

A few examples of the damage that small outdoor fires do may be cited. Forest fires entered and destroyed the town of Chrisholm, Minnesota, in 1908, and in 1918 forest fires burned over 15 townships in that state and killed 559 people. A conflagration covered 18 townships in northern Ontario in 1922, killing 44 people. The following year a grass fire starting three miles from the City of Berkeley, California, swept to the city, destroyed 640 buildings, and did a damage of $6,000,000.

Some fire departments make a practice of supervising the burning of dry grass and weeds on vacant lots and fields in and near towns so that small fires that may start in these places will have nothing on which to feed. Other departments provide a

Fire sweeping through grass and brush in a suburban community ignited and completely destroyed this frame dwelling.

light auto truck equipped with pump cans, brooms, and other equipment with which to fight small outdoor fires. This saves wear and tear on the better heavy apparatus which may be kept in the fire station for more important fires.

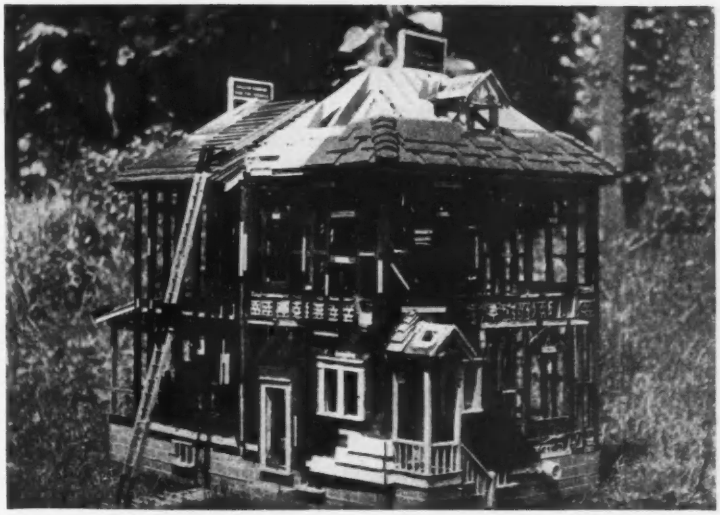
Another plan is to organize a fire department patrol made up of regular firemen or volunteers working in shifts. On days when it appears to be dry enough to make grass fires likely, this patrol may begin about noon-time to cover certain routes that have been laid out through the sections of the community where outdoor fires may be expected. The dangerous areas should be visited about every half hour. One man with a car or motorcycle, or even a bicycle, can do a lot of good work in this way.

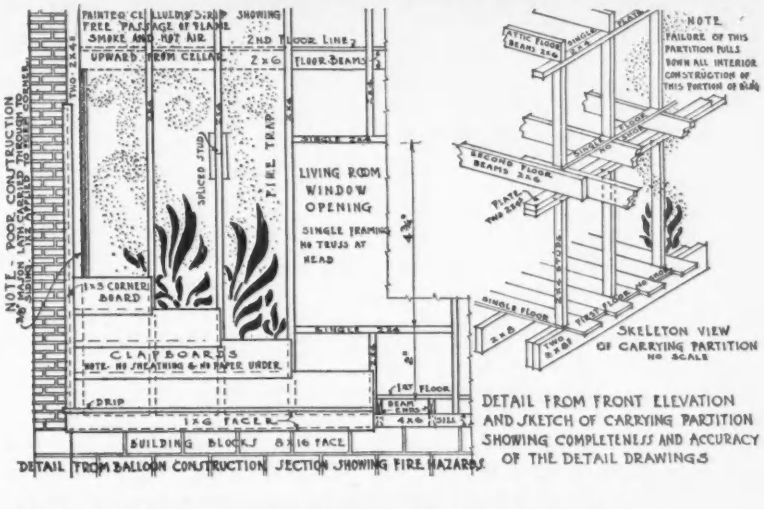
Perhaps several routes will be better than one. Under any procedure, the work of covering the routes should be divided up among the members of the company or department so that no member will be away from his regular occupation or duties for more than an hour or two at a time.

The man on patrol should be supplied with fire fighting tools such as a shovel and a broom so that he will be able to catch, while small, many of the fires which start from carelessly discarded cigarettes and matches. He should also have some pump tanks or other fire extinguishers. He should check up on bonfires and persons burning rubbish or burning over grass to see that fires are not built too large or too near buildings. After school hours it may be found desirable to check up on children playing with matches.

In some volunteer departments where men may not be available for this patrol work, boy scouts or members of other organizations of boys may be interested in and trained to cover the routes on bicycles after school hours.

A patrol getting around about every half hour can save the fire department much needless work by keeping small fires from starting, and putting out others before they become serious and threaten woodlands, buildings, and lives.




NOTE - POOR CONSTRUCTION AND MAJOR LATH CARRIED THROUGH TO ATTIC AT EVERY CORNER
PAINTED CEILING STRIP SHOWING FREE PASSAGE OF FLAME SMOKE AND HOT AIR
UPWARD FROM CELLAR
2ND FLOOR LINE
FLOOR BEAMS
2 x 6
SPLICED STUD
FIRE TRAP
LIVING ROOM WINDOW OPENING
SINGLE FRAMING NO TRUSS AT HEAD
3 x 3 CORNER BOARD
CLAPBOARDS
NOTE- NO SHEATHING & NO PAPER UNDER
DRIP
1 x 6 FACE
BUILDING BLOCKS 8 x 16 FACE
DETAIL FROM BALLOON CONSTRUCTION SECTION SHOWING FIRE HAZARDS
NOTE
FAILURE OF THIS PARTITION PULLS DOWN ALL INTERIOR CONSTRUCTION OF THIS PORTION OF BLDG
ATTIC FLOOR BEAMS 2 x 6
SECOND FLOOR BEAMS 2 x 6
PLATE TWO 2 x 6
SINGLE FLOOR
TWO 2 x 8
SKELETON VIEW OF CARRYING PARTITION NO SCALE
DETAIL FROM FRONT ELEVATION AND SKETCH OF CARRYING PARTITION SHOWING COMPLETENESS AND ACCURACY OF THE DETAIL DRAWINGS

Model House and Detailed Drawings Show Safe and Unsafe Construction

THE main structural features of a typical dwelling are illustrated by the picture above. The front part of the house shows safe construction features such as fire-stopping, substantial framing and fire retardant roofing such as a good building code requires. The rear part shows ordinary balloon framing, wooden shingles, and other defects. The house is built to a scale of 1 ft. to 1 in.

Three blueprints (size 24 in. x 40 in. each) showing both the good and bad construction features have been prepared by the builder of the model, Alex Green, who is Assistant Chief of the Morris Township Volunteer Fire Department (member N.F.P.A.) of Morristown, N. J. Chief Green makes these prints available to any fire department interested for five dollars a set. The sketch above is reduced from a small section of one print and shows the completeness of the plans.

In Morristown the model and the prints are used to familiarize the firemen with the various types of construction which may be encountered in actual fire fighting. They are also used as exhibits.

Inspecting Dwellings Twice a Year

Horicon, Wisconsin, Has 612 Homes Which the Fire Department Reaches With Six Volunteer Inspectors

By Anton A. Schneider
Horicon Volunteer Fire Department
(*Member N.F.P.A.*)

HORICON has a population of 2134 people, and has 612 houses in the dwelling district. Our fire loss in 1934 was $435, which certainly demonstrates what results can be obtained from systematic inspection work. We believe that the inspection of all dwellings in the town twice a year is a very important part of our fire prevention program.

The law requires that a written inspection report be made and kept on file for each piece of property. Beginning this year we are using a new inspection report form when inspecting dwellings. This is an 8½ x 11 in. form which has a list of hazards and conditions printed down the left-hand side of the sheet. The first blank column is for making notations at the time of the first annual inspection, and the second column is for the second inspection. This form is reproduced on this page, considerably reduced in size. The blank is designed with the sort of inspection which can be made from the outside of the building principally in mind, since we are limited to that by law, but good cooperation from home owners enables us to cover both inside and outside in a large number of cases.

The report is filled out on the premises when the inspection is being made. Inspectors turn in their reports to the Chief's office. In some cases the Chief makes re-inspections, and if serious abuses still exist, he may decide to notify the State Industrial Commission so that it may take steps to secure correction of the hazard. The completed annual reports remain with the Chief's secretary, and are filed by wards, with cross-reference card files by street numbers and by names of owners.

Six men are chosen to make the dwelling inspections. The Chief gives them specific instructions on how to make inspections in a business-like way before they go out. Each man is instructed to be courteous and tactful. With each man inspecting about 100 houses, it isn't a long job, and he is paid six dollars for it. He keeps his job as long as he does good work. Any serious fire hazards found are reported at once to the Chief.

The six inspectors are switched around for the second annual inspection of the year so that the same man will not inspect the same houses both times. This campaign against fire hazards is surrounded with much publicity during Fire Prevention Week in October. The inspector hands each householder a carefully prepared leaflet showing fire dangers within the home. Last year we gave out a printed sheet entitled "Inspect Your Home Regularly for Fire Hazards". It consisted of a list of 47 questions such as "Have you a metal ash can?", "Is the chimney clean?", and "In what condition is the roof on your home?"

Our local newspaper gives these inspection campaigns big headlines and good write-ups. This helps us a lot in educating the people of the community in fire prevention.

The dwelling inspections are only a part of the inspection work we do in complying with the Wisconsin state law. One requirement is that all buildings outside the fire limits or congested area must be inspected twice a year, beginning on the first day of January and the first day of July. Within the fire limits, buildings must be inspected four times a year, beginning on the first day of the months of January, April, July, and October. Another report form is used for inspecting these buildings which are mostly business places such as stores and garages. The inspection procedure, however, is similar to that for inspecting dwellings as described in this article.

FRONT OF SHEET

INSPECTION REPORT
CITY OF HORICON
Dwelling District

Name _____ Tenant _____
Ward No. _____ No. _____ _____ St.

Dwelling		
Stories high		
Construction		
Date of const.		
Condition		
Roofing		
Condition		
Chimneys		
Condition		
Additional data		
Barns, Sheds, Garages		
How many		
Construction		
Date of const.		
Condition		
Height		
Roof		
Condition		
Chimneys		
Condition		

Answer EVERY Question

BACK OF SHEET

General Conditions		
Electric hazards		
Rubbish		
How disposed		
Ashes		
How disposed		
Dry grass, weeds, leaves		
Oily rags		
Gas or oil tanks		
Obstructions to entry ways		
Obsolescence		
Remarks		

Date of insp. _____ _____ Inspector

Date of insp. _____ _____ Inspector

Owner notified _____ Chief

Answers to Discussion Topics

31

Q. *After returning to quarters from a fire, what things need to be checked in order to make certain that the apparatus and other equipment will be maintained in good working condition?*

A. *All working parts of the apparatus and all the tools and equipment on it should be carefully examined to see that everything is in its proper place, undamaged, and ready for the next run.*

It may be necessary to refill the booster tank, the gasoline tank, and the radiator. The tires should be checked for air and damaged places. Where there is a chemical tank, it may need cleaning and recharging. The oil in the crankcase should be checked. Grease cups may need refilling. Valves may need attention to return them to a serviceable condition. Brakes, clutch, fan belt, lights, wiring, and spark plugs should be examined. Water and any foreign material present should be removed from the pumping unit. Hand extinguishers may need refilling.

Used hose should be removed for cleaning and drying, and the hose bed reloaded with dry hose. Couplings may be damaged or the threads battered. Burst or damaged hose may have to be sent to the repair shop. Hose washers may require replacing.

All minor equipment should be checked for location and condition. It may be desirable to wash and dry the entire apparatus and equipment.

Problem Questions

FOR MARCH

Suggested for discussion at company and department meetings this month

33

What does a fire chief need to know about his community?

34

Under what conditions do dust explosions take place in occupancies such as grain elevators after firemen have begun fighting a fire in such property?

Watch for the answers in the next issue of VOLUNTEER FIREMEN

32

Q. *What common chemicals are hazardous when they become wet or moist?*

A. *Water is the best extinguishing agent for fires in many chemicals, but there are a few chemicals which may generate heat sufficient to cause fire when even slightly moistened. There are other chemicals which react with water to produce flammable gases. The following are examples:*

Calcium oxide (unslaked lime), generates heat when wet. This may cause ignition of woodwork. Fires in buildings used for lime storage may be either allowed to burn themselves out without direct application of water or heavy streams may be used to wash the lime out of the building, depending upon conditions.

Calcium carbide gives off acetylene gas when wet. It should always be kept in tight metal containers. Fires in buildings used for the storage of calcium carbide drums may be fought with water if the drums are tight and streams are carefully handled. If drums are open or broken, water may increase the intensity of the fire.

Magnesium dust (flashlight powder) when wet produces hydrogen gas. Furthermore, hose streams may stir up the dust to cause a dust explosion. Water should never be used around magnesium dust. Fires in this material can be put out with sand, ashes or rock dust, applied gently.

Aluminum dust (often a principal ingredient of bronze powder), is similar in hazard to magnesium dust, but is somewhat less hazardous at ordinary temperatures.

Sodium or potassium peroxide storage should be kept thoroughly dry and sand or rock dust used in fighting its fires rather than water.

The danger of any chemical depends upon the quantity stored. A pamphlet, giving the recommendations of the N.F.P.A. Committee on Hazardous Chemicals and Explosives on all common chemicals, is available to readers on request.

Fire Tools

Brooms

FIRE departments use brooms for beating out grass and brush fires, for salvage work, and for cleaning up operations after a fire.

The wire push broom or brush is sometimes used for grass fires, but more often for overhauling work. The wire broom shown at the left is widely used. It is made of long steel bristles in six bunches or fillers. New fillers can easily be inserted when the old ones wear out. When used on hot grass fires, the steel bristles sometimes lose their temper and become bent.

Some departments favor the rattan type of fire broom shown in the center for grass fires. This broom is shaped like a cone, with the small end attached to the handle. The bristles may burn or char a little, but they are very elastic and if water is available to wet the broom when beating out grass fires, the heat is less likely to damage the bristles.

The ordinary corn broom (or rattan filled) is shown on the right.

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Volume 3 **March, 1936** Number 3

Fire Department Annual Reports Many departments and companies make it a practice during January and February each year to send us copies of their annual reports. We are glad to receive them, no matter if they are printed, typed, or written in long hand.

From St. Stephen, N. B. (population 3437), comes an interesting example. Chief Ryder reports that his department answered 178 alarms last year, 58 of which were from the Town of Calais, Maine, which is just across the St. Croix River. He used 9200 feet of hose and 1315 feet of ladders. The attendance of members at fires was 95 per cent, and the fire loss was $6500.

Secretary Griffith of the Volunteer Fire Company No. 1 of Tower City, Pa. (population 2482), reports that they did not have a single fire in 1935. How many departments throughout the country can equal this record?

Additional Fire Schools Since publishing the summary on fire schools held throughout the country during 1935, more reports have come in. The following notes should be added to make the summary complete.

In Maine, schools for volunteers were held each Saturday afternoon for a month at Bangor, Biddeford, Lewiston, and Portland with a total attendance of 80 men. Courses will be conducted at the same centers this summer and early fall.

In New Jersey, the Morris County Fire School Committee plans to hold weekly meetings throughout this year at Denville.

In Missouri, the Third Central Fire School was held at Columbia in September, 1935, with 133 present.

Don't Miss An Issue Delivery of VOLUNTEER FIREMEN each month is guaranteed to every member of the Volunteer Firemen's Section. If for any reason a member fails to get his copy at the usual time, he should notify the executive office. Another copy will be promptly mailed.

Plant Brigades Like It Too The President of the National Fire Protection Association, Mr. Harold L. Miner, as head of the Safety and Fire Protection Division of the E. I. du Pont de Nemours and Company, has made VOLUNTEER FIREMEN available to fire brigades in 68 of the manufacturing plants under his supervision.

Last December he checked up to see what might be the reaction of members of his fire brigades to the magazine. He reports the following typical replies:

"We frequently get good pointers out of the magazine. It is distributed to the plant manager, the fire chief, and assistant fire chief."

* * *

"We are making arrangements for a wider distribution of this magazine to our supervisory force."

* * *

"The contents of these publications are the only means that non-professionals have of learning the ever-changing methods of fire prevention and fire protection."

* * *

"We would miss this magazine very much if it were discontinued. The article on page 6 of this month's issue, 'Will This Layout Work', also on the same page, 'Thawing Frozen Hydrants', is very valuable information for firemen. Also on the editorial page is an instructive item 'What Would You Do', and it is too bad this item cannot get into every home."

New Members In February Four hundred and thirty firemen from 20 departments enrolled in the Volunteer Firemen's Section for the first time last month. In addition, 811 men from 35 companies or departments renewed their memberships. The total membership is now 9,735. The new members are:

Holyoke Volunteer Fire Department, Holyoke, Colorado.

Gilman Fire Company, Gilman, Illinois.

Midlothian Fire Department, Midlothian, Illinois.

Eldora Volunteer Fire Department, Eldora, Iowa.

Lansdowne Volunteer Fire Company No. 1, Inc., Lansdowne, Maryland.

Dalton Volunteer Fire Department, Dalton, Massachusetts.

Wilber Volunteer Fire Department, Wilber, Nebraska.

Whitefield Fire Department, Whitefield, New Hampshire.

Cedarville Fire Department, Cedarville, New Jersey.

East Hampton Fire Department, East Hampton, Long Island, New York.

Youngstown Sheet and Tube Company, Fire Brigade, Youngstown, Ohio.

Beaverton Volunteer Fire Department, Beaverton, Oregon.

Albion Volunteer Fire Department, Inc., Albion, Pennsylvania.

Eagle Hose Company No. 1, Dickson, Pennsylvania.

Reliance Hose Company No. 1, Elizabethville, Pennsylvania.

Oakmont Fire Company No. 1, Oakmont, Pennsylvania.

Warren State Hospital, Warren, Pennsylvania.

Grafton Volunteer Fire Department, Grafton, West Virginia.

Hortonville Fire Department, Hortonville, Wisconsin.

Cornwall Volunteer Fire Brigade, Cornwall, Ontario.

Making a Good Job of It

By Warren Kimball

In this column each month an experienced volunteer fireman discusses the handling of a typical fire. Readers are invited to describe fires which illustrate one or more principles of craftsmanlike fire fighting. (Names and places may be omitted.)

VOLUNTEER firemen responding two miles on a rural call found the cellar of a valuable farm house a mass of flames and fire running up the outside wooden shingle wall in the rear. The blaze was caused by using gasoline to kindle a fire in a laundry stove. No water was available for a big line (2½-inch hose) which was badly needed and the fire had to be fought with a booster line and a chemical line with a total of only 110 gallons of water available. Fortunately the basement was readily accessible from the outside and the fire was controlled by using one of the small streams from each end of the basement simultaneously.

At the start an inexperienced fireman wanted to take one of the streams into the first floor to cut off the fire there, but more experienced men knew that both were necessary in the cellar if the main fire was to be controlled by the time the tanks were empty. Hand extinguishers were then used to control the small amount of fire which had entered the first floor around pipe openings, and the upper part of the building was ventilated.

There was a brook approximately 2,000 ft. from the house where a pumper might have taken suction, but it was obvious with the headway of the fire that the house would be lost in the time required to lay a hose line.

Where adequate water supplies are available, the usual correct procedure in fighting cellar fires is to place the first line on the first floor to prevent the upward spread of the fire. Had this rule been followed in this case, there would not have been water enough to control the main body of fire. Quick thinking and proper attack prevented a large loss.

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There are positive reasons why Buckeye Shut-off Nozzles *will not leak:* (1) The distinctive design; (2) The high-grade workmanship. Buckeye Nozzles will not open or close under pressure when valve is partially shut down — yet shut-off works easily. The adjustment is simple. The working parts are accessible. The nozzles throw a smooth stream. Nozzles and all integral parts bear the Buckeye unconditional guarantee.

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Membership Plan

Volunteer Firemen's Section, National Fire Protection Association

WHERE twenty or more firemen in a volunteer company or department affiliate with the Volunteer Firemen's Section the cost is 50 cents a year *per man*. Each fireman will receive one copy of VOLUNTEER FIREMEN, the monthly journal of the Volunteer Firemen's Section, mailed regularly to his home address. The company or department automatically becomes a member of the National Fire Protection Association and is entitled to full privileges of membership. All the literature regularly issued to N.F.P.A. members is mailed to headquarters of the company or department.

Membership may be applied for by one member of the company or department collecting 50 cents for each of the 20 or more members and making a single remittance for the group, or the company or department may take a membership for its men and make a single remittance from the company or department treasury.

Companies With Less Than 20 Members

Because of the large amount of material mailed to members, not less than $10.00 can be accepted from any company or department for membership dues. In the case of companies or departments with less than twenty men this means that the cost divided among them will be slightly higher per man. Of course, some such companies or departments may prefer to make a single remittance of $10.00 from the company or department treasury. In other cases a few interested citizens, not members of the company or department, may be glad to contribute 50 cents apiece to make up the required minimum of twenty, so that the members may secure the rate of 50 cents per man.

These companies or departments have full privileges of N.F.P.A. membership as above, and each member receives the monthly magazine, VOLUNTEER FIREMEN, at his home.

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SHUREDRY is the cover that fire chiefs all over the country have endorsed for superior service.
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Rules . . .

PYRENE PRIZE LETTER CONTEST

1. Contestants in the Pyrene Prize Letter Contest must be members of their local fire department.

2. Letters are to describe actual experiences where any approved fire extinguisher of any make has saved lives or property.

3. Trade names may be used but will be deleted in publication. Publishers reserve the right to edit winning letters to permit publication.

4. Each contestant automatically vouches for the truth of the facts presented from his own or others' experience.

5. Only one letter may be submitted each month.

6. Letters must be legibly written in ink or typewritten on white paper, one side only. Preference will be given to letters not over 250 words in length.

7. Letters received after the 8th of the month will be judged in following month's competition.

8. Monthly prizes in cash will be: 1st, $10.00; 2nd, $3.00; and 3rd, $2.00.

9. Address contest letter to Pyrene Prize Letter Contest, National Fire Protection Association, 60 Batterymarch Street, Boston, Mass.

Pyrene Prize Letter Contest

Winners This Month Tell of Difficulties Reaching Fires

LIEUTENANT Leith and Chief Dow relate experiences of how firemen endure hardships in order to reach fires in difficult places. Chief Henley's wife demonstrated calmness and knowledge of what to do about a cellar fire. These stories win this month.

Send in your experience. You may win the $10.00 First Prize or one of the other cash prizes offered in this contest cooperatively by the Pyrene Manufacturing Company of Newark, N. J., and VOLUNTEER FIREMEN.

FIRST PRIZE—$10.00

JACK LEITH, *Lieutenant*,
Youngstown Sheet and Tube Company,
Volunteer Fire Brigade, Youngstown, Ohio

Life Saved, Plant Shut-Down Averted

"Responding to a 2 A.M. alarm at the blast furnaces in our plant, we found a grease fire under the floor of a skip hoist. The flames were enveloping the doorway of the control room, cutting off the operator's escape to the ground 50 feet below. It was impossible to fight this fire from the stairway.

"Seeing that a ladder was necessary to get the trapped operator out through a window, I ordered a second alarm pulled (our truck only responds to a second), and had the rest of the company stretch in a hose line.

"One of our men said he thought he could shin up an iron girder and use a hand extinguisher. Great, if he could do it! He started up, and I jumped to the hose reel box and grabbed two 1-quart carbon tetrachloride extinguishers. By that time he was up about 45 feet and hanging on by knee pressure only. I tossed one extinguisher into his outstretched hands and he started pumping. As soon as it was empty I tossed him the other. Those two hand extinguishers did the trick. They checked the fire enough for us to remove the operator, who was slightly the worse from the smoke he had eaten. A 2½-gallon soda-acid extinguisher finished the job.

"A life was saved, valuable electrical equipment which would have been ruined by water, if not by fire, was saved, and an indefinite shut-down averted."

SECOND PRIZE—$3.00

GILES DOW, *Chief*,
Fire Department, Stoughton, Wisconsin

Save House Despite Snow and Cold

"At 8:30 yesterday morning we were called out for a farm house fire five miles out of town. A blizzard had raged all night. The State Highway Commission had broadcast half an hour earlier that every highway in the State was impassable, and that the temperature was 25 degrees below zero.

"In response, however, a light telephone company truck was dispatched, manned by two men and carrying a 2½-gallon soda-acid extinguisher as part of its equipment. The truck was stalled in a snow drift within sight of the fire, but the men floundered through the drifts, carrying the extinguisher to the burning house.

"They proceeded to the attic and found the overheated chimney had set fire to studdings. Using the extinguisher they put out the fire with only a nominal damage to the building. Had it not been for the work of these men, the house and probably the outbuildings would have burned to the ground."

THIRD PRIZE—$2.00

JAMES B. HENLEY, *Assistant Chief*,
Keewatin Fire Dept., Keewatin, Minnesota

Chief's Wife Saves Own Home

"My wife was reading VOLUNTEER FIREMEN for February last evening, and noting the prize letters in this contest, she said, 'Why don't you write about the time I saved our home from burning by using that soda-acid upside-down fire extinguisher with the little hose tied to it'. That was 20 years ago, and I had forgotten the incident, but here is the story as she reminded me of it.

"It was when I was Chief at Iron River, Michigan, that a phone call came in to the fire station and I listened in and heard my wife's voice. She told the driver her address and that there was a fire in the cellar. We responded.

"I found my wife at the bottom of the cellar stairs. She had dragged a 2½-gallon soda-acid extinguisher down the steps, turned it upside down on the bottom step, and had the fire completely extinguished. The fire started when a maid dropped a lighted match onto the paper covers of fruit jars. It had been burning in the wooden shelving around the side walls and might soon have been a serious fire."

HONORABLE MENTION

NORMAN G. LANGE,
Fire Department, Anchorage, Alaska

ORVIL WYMAN,
Volunteer Fire Dept., Dalton, Mass.

R. G. ROCKEY,
Volunteer Fire Dept., Ewing, Nebraska

Subjects Covered in New Handbook

CHAPTER HEADINGS

1. Fire Losses and Fire Protection.
2. Loss of Life by Fire.
3. Fire Protection Organizations.
4. Laws and Regulations.
5. Common Hazards.
6. Heating Appliances, Chimneys, Flues.
7. Flammable Liquids.
8. Gases and Internal Combustion Engines.
9. Finishing Processes.
10. Electricity.
11. Protection Against Lightning.
12. Dust Explosions.
13. Hazardous Chemicals and Explosives.
14. Nitrocellulose Film and Pyroxylin Plastics.
15. Spontaneous Heating and Ignition.
16. Fire Causes by Occupancies.
17. Retarding the Spread of Fire.
18. Measurement of Fire Severity.
19. Fire-Resistive Construction.
20. Heavy Timber Construction.
21. Roofs and Roof Coverings.
22. Protection of Openings.
23. Protection Against Exposure.
24. Structural Improvements.
25. Fire Retardant Treatments.
26. Prevention of Water Damage.
27. Public Fire Protection.
28. Fire Prevention Activities of State Fire Marshals and City Fire Departments.
29. Public Water Supplies.
30. Fire Pumps.
31. Gravity and Pressure Tanks.
32. Outside Private Protection.
33. Standpipes and Hose Systems.
34. Fire Extinguishers and Fire Pails.
35. Automatic Sprinkler Protection.
36. Types of Automatic Sprinklers.
37. Standard Sprinkler Installations.
38. Dry Pipe and Other Non-Freezing Sprinkler Systems.
39. Special Types of Sprinkler Systems.
40. Water Flow Sprinkler Alarms.
41. Sprinkler Inspection and Supervision.
42. Sprinkler Maintenance Problems.
43. Sprinkler Leakage.
44. Outside Open Sprinklers.
45. Smothering Systems.
46. Signaling Systems and Thermostats.
47. Self Inspection of Fire Equipment.
48. Private Fire Organizations.
49. Salvaging Operations.
50. Fire Investigation.
51. Standard Plan Symbols.
52. Exits.
53. Protection of Records and Valuables.
54. Transportation Fire Safety.
55. Farm and Forest Fire Protection.
56. Conflagration Hazards and Protection.
57. Hydraulic Calculations and Tests.
58. Tables and Charts.

M · S · A

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See chapter headings listed on this page

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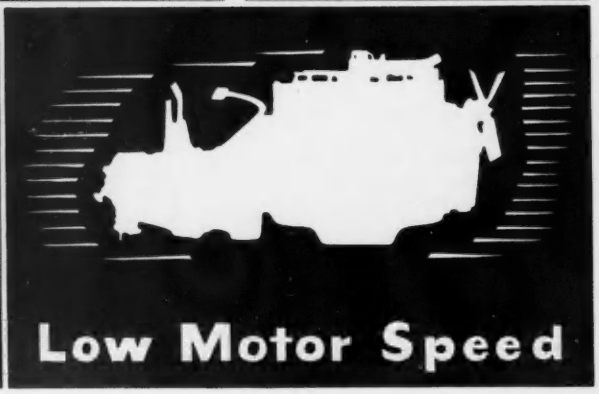

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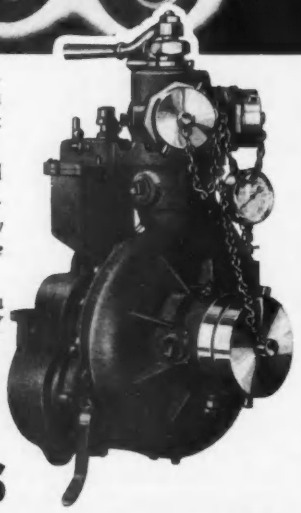

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